

## LETTERS TO THE EDITOR.

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## A Surface-tension Experiment.

SANS rien vouloir enlever à l'intérêt de l'expérience d'hydrodynamique signalée par Mr. Baker (p. 196), je crois pouvoir dire qu'elle n'est pas nouvelle, au moins, en tant que phénomène.

Ces sortes de formations de "vasques" liquides étaient très usitées, dans les jardins au XVII<sup>ème</sup> siècle et nous en rencontrons encore aujourd'hui des exemples dans les parcs où le régime des eaux n'a pas changé depuis cette époque. Pour n'en citer qu'un, que connaissent sans doute beaucoup de vos lecteurs, je rappellerai qu'à Burgos le "paseo del Espalón viejo" possède une fontaine où l'on peut voir une belle réalisation de cette expérience. Seulement, là le jet d'eau est dirigé de bas en haut et vient se briser sur un disque placé horizontalement au dessus de lui; puis retombant, il forme autour du tuyau la surface fermée si élégante décrite par M. Baker.

Je crois me souvenir que dans un ouvrage publié en 1663 à Nuremberg par George André Boeckler sous le titre "Architectura curiosa nova," il y a de nombreuses planches représentant des jets d'eau d'effets très variés. Peut-être la forme signalée par Mr. Baker s'y trouve-t-elle?

Il serait intéressant de le vérifier, comme aussi de chercher la figure mathématique de cette surface fermée.

HENRY BOURGET,  
de l'Université de Toulouse.

## Duration of Totality of Solar Eclipses at Greenwich.

IN NATURE (vol. lxii. p. 64 and p. 86) will be found an estimate of the maximum duration of totality for a solar eclipse under the most favourable conditions, the result being 7m. 40s. for a place in north latitude  $4^{\circ} 52'$ . For Greenwich I estimate the maximum duration at 5m. 47s. There is good evidence for believing that the "Nautical Almanac" diameter of the moon, used in computing eclipses, is too large. It is almost exactly 2160 miles, and should be reduced probably to 2158 miles. This reduction would alter the above estimates to 7m. 34s. and 5m. 42s. respectively. That all the conditions necessary to produce the maximum totality of 5m. 42s. will ever be simultaneously satisfied for Greenwich is extremely improbable.

Leeds, July 14.

CHAS. T. WHITMELL.

## THE NEW YORK MEETING OF THE AMERICAN ASSOCIATION.

AT the forty-ninth meeting of the American Association for the Advancement of Science, which was held on June 23-30, at Columbia University, New York City, two experiments were tried. The one was a change of date and the other a somewhat radical change in the character of the meeting. Heretofore, it may be remembered, the American Association has met at about the third week in August, approximately at the same time as the meeting of the British Association. The long summer vacation of the American colleges and universities usually lasts from about the end of June until nearly the beginning of October. It therefore resulted that men engaged in educational work were obliged to interrupt their summers at the seaside or the mountains, to attend the Association meetings. This has been found to be very inconvenient to many on account of the long distances in the States and the widely separated places of meeting. The present year was thought to be a particularly favourable one in which to try a change of date, since many members expected to start for Europe after the close of their college terms, and New York, as the principal port of debarkation, was chosen as the place of meeting for much the same reason.

The other experiment was in the doing away, to a large extent, with the social features and entertainments which had characterised previous meetings. It was distinctly

understood that no entertainment fund would be raised in New York, and that the Association would pay its own expenses. It was, therefore, a more distinctively working scientific meeting than has been held before. The attendance was not large, and only 450 members registered. Fifteen affiliated societies held their meetings at the same time, including several which have heretofore not affiliated themselves with the older society. These were the American Mathematical Society, the American Physical Society, and the American Psychological Association. The other societies in attendance were the American Forestry Association, the Geological Society of America, the American Chemical Society, the Society for the Promotion of Agricultural Science, the Association of Economic Entomologists, the Botanical Society of America, the Society for the Promotion of Engineering, Education, the American Folk-Lore Society, and the American Microscopical Society.

The session was opened by the retiring President, Mr. G. K. Gilbert, who was elected at the December meeting of the Council to fill the vacancy caused by the death of Dr. Edward Orton last autumn. Mr. Gilbert introduced the incoming President, Prof. R. S. Woodward, of Columbia University, who thereafter presided over all the general sessions of the Association. A cordial and eloquent address of welcome was made by Mr. Seth Low, President of Columbia University; and Mr. James Wilson, the Secretary of Agriculture in President McKinley's Cabinet, upon being invited to address the Association, made a strong plea for applied science. On Tuesday afternoon the addresses of five of the Vice-Presidents were given, the other four being postponed until next year.

Vice-President Asaph Hall, junr., addressed the Section of Mathematics and Astronomy on the teaching of astronomy in the United States. Prof. Hall urged that elementary astronomy should be taught in the high schools and preparatory schools as well as in the colleges. Elementary astronomy he defines as meaning such part of the science as can be learned by an intelligent student without mathematical training. He advocated the study of the history of astronomy as a culture study in the colleges, showing that the earliest religious festivals depended upon astronomical observations. An interesting feature of this historical side would be the philosophical study of the different theories of the universe. He advocated the more general teaching of spherical astronomy and the elements of celestial mechanics, and showed that during the past twenty years great advances in astronomical teaching have been made in the States. In his opinion the best equipped observatory for teaching purposes is at Princeton, and the theses in practical astronomy produced in America compare favourably with those presented in Germany and France.

Vice-President Merritt addressed the Section on Physics on the subject of "Kathode Rays and some Related Phenomena," referring to the various views which have been advanced concerning the nature of the kathode rays, and the general adoption of the Crookes' theory of electrified particles. He gave an account of the progress made during the last ten years, and discussed recent experiments concerning the size of the ray particles and the speed at which they travel. Minor difficulties in the present theory were pointed out, and the probable direction of further progress was indicated. Lantern views were shown illustrating various vacuum tube phenomena related to kathode rays.

The address of Vice-President Howe before the Section of Chemistry was on the subject, "The Eighth Group of the Periodic System and some of its Problems." It was pointed out that in the early work of Newlands and of Mendeléeff, which subsequently developed into the periodic law, a serious difficulty was met with in dealing with iron, cobalt, nickel, and the metals of the platinum group.